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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/541,631 | 04/03/2000 | Alan Balkany | | 4315 |
| 7590 | 05/20/2005 | | EXAMINER | |
| Alan Balkany 161 Commons Circle Saline, MI 48176 | | | TO, BAOQUOC N | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2162 | |

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/541,631 | BALKANY, ALAN | |
| | Examiner | Art Unit | |
| | Baoquoc N. To | 2162 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 28 February 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3, 16, 18-24 and 26-29 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) 5, 16, 25, 29, 31 and 32 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Prosecution Application

1. The request filed on 02/28/2005 for a Requested For Continued Examination (RCE) under 37 CFR 1.53(d) based on parent Application No. 09/541631 is acceptable and a RCE has been established. An action on the RCE follows.

Claims 1-3, 5, 16 and 18-32 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 20 and 26 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 16, 17, 19-24 are 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Bugajski (US. Patent No. 5,592,667).

Regarding on claim 1, Bugajski teaches a method for storing a plurality of parallel data element sequences comprising the step of:

(a) creating a dictionary of unique values for each of said data element sequences (dictionary created for each field), whereby each dictionary associates a numeric index with each unique value in the corresponding sequence (each field value is associated with numerical index values...however, leads to the creation of a table of associative memories whose two components are indexes to the memory tables of the nodes corresponding to the derivative branches or "children") (col. 9, lines 61);

(b) forming an n-aray tree with leaf and interior nodes (terminal or non-terminal nodes) (col. 9, line 61) where:

(1) each leaf node (branches or children) corresponds to one of said dictionaries (dictionary) (col. 9, lines 54-61),

(2) each interior node (each none-leaf or non-terminal node in the tree (such as 105, 108 etc.) associates a numeric index with tuples of numeric indexes from the other subordinate leaf or interior nodes (braches or children) (col. 9, lines 56-61), and

(3) interior node are capable of storing one or more sequences of mutually-consecutive tuples by representing said sequences in a form that uses less storage space than representing said sequences as individual tuples (associative memory assigning a numerical index value to each unique index value to each unique combination of index values of the two nodes from which that non-terminal node is derived) (col. 15, lines 20-25), and

(4) one or more interior node are capable of:

- i. recording the addition of a tuple that extends a tuple run by incrementing the length field of said tuple run (col. 8, lines 11-13), or
- ii. recording the addition of a tuple that invalidates an existing tuple run by splitting said tuple run into one or more subruns, wherein none of the tuples of said subruns contain any element of said added tuple, or
- iii. recording the addition of a tuple that has not been previously added to said interior node, wherein said added tuple does not extend a tuple run, by adding said tuple to a tuple collection , or
- iv. any combination of two or more of i, ii, and iii.

Regarding on claim 2, Bugajski teaches each unique value of a leaf node and each unique tuple of an interior node is associated with a count of the number of times that value or implied tuple of values occurred in the parallel data element sequences (col. 4, lines 56-67 and col. 4, lines 1-5).

Regarding on claim 3, Bugajski teaches a means for efficiently processing a subset of a tree's leaves, comprising the following steps:

- (a) the definition of a gate field in interior nodes(each field value associated with a numerical index value) (col. 9, lines 55-59),

(b) setting each of said gate field's values, to indicate which of the corresponding interior node's branches lead to leaf nodes in said subset (children or branches) (col. 9, lines 55-69).

(c) following paths that lead to said leave (col. 12, lines 55-67 and col. 13, lines 1-12), and

(d) processing the leaves encountered (col. 12, lines 55-67 and col. 13, lines 1-12).

Regarding on claim 18, Bugajski teaches processing comprising using values or tokens at said leaves to reconstruct a subset of a stored record (col. 8, lines 15-20).

Regarding on claim 19, teaches reconstructed records are inserted into a new tree.

Regarding on claim 20, Bugajski teaches a method for storing a plurality of parallel data element sequences comprising the step of:

(a) creating a dictionary of unique values for each of said data element sequences (dictionary created for each field), whereby each dictionary associates a numeric index with each unique value in the corresponding sequence (each field value is associated with numerical index values...however, leads to the creation of a table of associative memories whose two components are indexes to the memory tables of the nodes corresponding to the derivative branches or "children") (col. 9, lines 61);

(b) forming an n-aray tree with leaf and interior nodes (terminal or non-terminal nodes) (col. 9, line 61) where:

- (1) each leaf node (branches or children) corresponds to one of said dictionaries (dictionary) (col. 9, lines 54-61),
- (2) each interior node (each non-leaf or non-terminal node in the tree (such as 105, 108 etc.) associates a numeric index with tuples of numeric indexes from the other subordinate leaf or interior nodes (braches or children) (col. 9, lines 56-61), and

Regarding on claim 21, Bugajski teaches each unique value of a leaf node and each unique tuple of an interior node is associated with a count of the number of times that value or implied tuple of values occurred in the parallel data element sequences (col. 4, lines 56-67 and col. 4, lines 1-5).

Regarding on claim 22, Bugajski teaches a means for efficiently processing a subset of a tree's leaves, comprising the following steps:

- (a) the definition of a gate field in interior nodes (each field value associated with a numerical index value) (col. 9, lines 55-59),
- (b) setting each of said gate field's values, to indicate which of the corresponding interior node's branches lead to leaf nodes in said subset (children or branches) (col. 9, lines 55-69),
- (c) following paths that lead to said leave (col. 12, lines 55-67 and col. 13, lines 1-12), and
- (d) processing the leaves encountered (col. 12, lines 55-67 and col. 13, lines 1-12).

Regarding on claim 26, Bugajski teaches a computer-implemented method for storing a plurality of parallel data element sequences, and efficiently processing elements from subset of said sequence, comprising:

(a) creating a dictionary of unique values for each of said data element sequences, wherein each dictionary associates a numeric index with each unique value (each field value is associated with numerical index values...however, leads to the creation of a table of associative memories whose two components are indexes to the memory tables of the nodes corresponding to the derivative branches or "children") (col. 9, lines 61),

- (b) forming one or more n-ary trees with leaf and interior nodes where:
- (1) each leaf node corresponds to one of said dictionaries (col. 9, lines 54-61),
 - (2) each interior node associates a numeric index with tuples of numeric index with tuples of numeric indexes from other subordinate leaf or interior nodes (branches or children) (col. 9, lines 56-61),
 - (3) a gate field is defined for one or more interior nodes (col. 2, lines 42-50),
- (c) processing the leaves corresponding to said subset of sequences by:
- (1) setting the value of said gate field for each said interior node, to indicate which of said interior node's branches lead to leaf nodes in said subset (children or branches) (col. 9, lines 55-69),

- (2) following paths that lead to said leaf nodes (col. 12, lines 55-67 and col. 13, lines 1-12), and
- (3) processing said elements in said leaf nodes encountered (col. 12, lines 55-67 and col. 13, lines 1-12).

Regarding on claim 26, Bugajski teaches each unique value of a leaf node and each unique tuple of an interior node is associated with a count of the number of times that value or implied tuple of values occurred in the parallel data element sequences (col. 4, lines 56-67 and col. 4, lines 1-5).

Regarding on claim 27, Bugajski teaches each unique value of a leaf node and each unique tuple of an interior node is associated with a count of the number of times that value or implied tuple of values occurred in the parallel data element sequences (col. 4, lines 56-67 and col. 4, lines 1-5).

Regarding on claim 28, Bugajski teaches the step of adding one or more of said reconstructed record subsets to another tree (col. 8, lines 5-20).

Object For Allowable

4. Claims 5, 25 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the known prior art alone or in combination neither teach or suggest "a) defining a problem space consisting of: (1) a set of states such that each state contains a set of leaves and zero or more interior nodes, each with two or more other nodes as children;

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(2) a value function, giving a numeric ranking of the value of any state's design;(b) defining one or more operators that transform one state to another; and (c) searching the problem space, starting from an initial state and applying operators to move to other states until a state with an acceptable design is reached."

Claims 16 and 31-32 are depended on claims 5, 25 and 30; therefore, they will be allowed base on their dependency.

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is at 571-272-4041 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at 571-272-4107.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231.

The fax numbers for the organization where this application or proceeding is assigned are as follow:

(703) 872-9306 [Official Communication]

Baoquoc N. To

May 14, 2005


JEAN M. CORRIELUS
PRIMARY EXAMINER